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The Influence of Machine Translation on English Majors' Employment and Countermeasures

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Abstract: This paper discusses the increasing internationalization of English due to globalization and the resulting employment opportunities for English majors. It also explores the advancements in machine translation technology and their impact on language accuracy and efficiency. Many people are concerned about the impact that machine translation technology will have on the traditional translation industry and the employment prospects of English majors. This paper analyses the development of machine translation technology, discusses its influence on the employment of English majors, and proposes strategies for English majors to adapt to these changes. These strategies include enhancing technical abilities, broadening employment prospects, and deepening professional field studies. The development of machine translation technology is expected to create new employment opportunities for English majors.

Keywords: machine translation technology, English majors, job market

1. Introduction

The significance of language as a communication tool in the current era of globalization is undeniable. More and more people are learning English to travel abroad. In China, English is a mandatory subject, and globally, it is an indispensable language. Consequently, the demand for the translation industry is increasing rapidly. However, the development of machine translation technology poses a risk to traditional manual translation, particularly for English majors. As a result of their professional characteristics, English majors are more vulnerable to these changes. It is important to consider the impact this may have on the job market for English majors and whether human translators will still be needed in the future. Studying the impact of machine translation technology on the employment of English majors is significant. This will provide students with insights into the future job market.

2. Historical Background and Employment of Machine Translation

Machine translation, as one of the important applications of computer technology, has its technical origins traced back to the 1950s when it was primarily used for encrypting and decrypting confidential documents in the military field. With the advancement of science and technology, especially the rise of deep learning and big data technology, machine translation has made remarkable breakthroughs. From the initial rule-based simple translation, to the widespread application of statistical machine translation, to the rise of neural machine translation technology today, the accuracy and naturalness of machine translation have been significantly improved.

2.1 Current Studies of Machine Translation Technology in China

Currently, China Knowledge Network contains over 1600 journal articles on AI and employment. However, there are only approximately 10 articles discussing the correlation between AI and English majors. This indicates a lack of research on the impact of AI on English majors and their employment opportunities.

In the existing relevant research, Xie Yimei (2018) conducted a comprehensive analysis of the development trend of the artificial intelligence industry from a macro perspective, and gave relevant policy recommendations based on the analysis results. This provides valuable reference for understanding the overall impact of artificial intelligence on the job market. Fang Wei (2021) focuses more on the analysis of the employment prospects and influencing factors of English majors in the context of the Internet era. Combined with the current employment situation, It provides English majors with pertinent employment strategies.

Ma Hangdan's (2019) research provides an in-depth understanding of English majors' recognition of machine translation through a questionnaire survey. The researcher discovered that despite the ongoing advancements in machine translation technology, English majors do not widely accept it. As a result, the

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researcher suggests integrating machine translation technology into English major teaching countermeasures to enhance the competitiveness of English majors.

2.2 Current Studies of Machine Translation Technology

Abroad Foreign scholars have extensively researched the rapid development of artificial intelligence technology. China Knowledge Net lists approximately 20 foreign journals related to this topic. The research mainly focuses on the impact of artificial intelligence application on translation teaching and how the efficiency of artificial intelligence translation meets the needs of most enterprises.

Kenny (2014) clearly points out in his research that the importance of translation technology in translation studies curriculum has been widely recognized. He further proposes that colleges and universities should actively incorporate machine translation teaching into the curriculum system to cultivate English translation talents with high quality and skills. This view reflects the importance of machine translation in translation teaching and its positive role in cultivating translation talents in the new era.

Ralph (2022), on the other hand, emphasizes the importance of adequate knowledge of machine translation for professional translators based on the widespread application of powerful translation technologies in professional translation, arguing that professional translators need to constantly update their knowledge and skills to adapt to changes in market demand as machine translation technology continues to advance and its application expands.

3. Advantages and Disadvantages of Machine Translation

Machine Translation (MT) refers to "the use of machines, through specific computer programs, to translate one written form or sound form of natural language into another written form or sound form of natural language."[2] In recent years, machine translation technology has made great progress, such as statistical machine translation (SMT) or neural network machine translation (NMT)[3], resulting in the continuous improvement of translation quality.

3.1 Advantages of Machine Translation Technology

3.1.1 Fast Translation

Machine translation technology enables the translation of large amounts of text, significantly improving translation efficiency. Hybrid machine translation technology, which combines various language processing techniques, has further improved translation speed. This technology utilizes a variety of different technologies and algorithms to address various translation challenges.[4] When dealing with numerous lengthy translation projects, rule-based translation can efficiently process particular language structures. Statistical translation, on the other hand, can quickly handle a vast amount of language data. Therefore, machine translation technology can improve the speed and efficiency of translation while preserving translation quality through various existing algorithms.

3.1.2 Low Translation Costs

(1) Cost Amortization

Machine translation models are expensive to train, but once trained, they can be used indefinitely, thus amortizing training costs. Additionally, machine translation systems can easily handle large volumes of text, thereby reducing unit translation costs.

(2) Cloud Computing

Machine translation services are typically deployed in the cloud and can be used on-demand. Users only need to pay according to actual usage, without investing in high hardware and maintenance costs, while also significantly reducing labor expenses. Without investing in high hardware and maintenance costs, but also greatly save labor costs.

[2]Tsinghua University (Department of Computer Science)--China Engineering Science and Technology Knowledge Center, Knowledge Intelligence Joint Research Center. 2018 Machine Translation and Artificial Intelligence Research Report [R]. AMiner.Org,2018:2,9-19.

[3]Li Yegang, Huang Heyan, Shi Shumin et al. Review of multi-strategy machine translation [J]. Journal of Chinese Information Science, 2015, 29 (02):1-9+23.

[4]Hu Xiaopeng, Geng Xinhui, Yuan Qi. Design of high quality English-Chinese machine translation engine based on hybrid strategy [J]. Industrial Technology Innovation, 2014, 01 (02):161-167. DOI:10.14103/j.issn.2095-8412.2014.02.022.

(3) Convenience

Machine translation tools are usually provided in the form of websites or applications. Users can conveniently access them anytime and anywhere via the internet without the need for complex software or hardware installation or waiting for manual translation schedules.

3.2 Limitations of Machine Translation Technology

3.2.1 Inability to Deal with Cultural Differences

Machine translation systems are trained using statistical models or neural networks. They lack human understanding and cognition of diverse cultural backgrounds. There are many culture-specific vocabularies, taboos, and etiquette in different cultures. Machine translation lacks human perception and feelings for context, making it easy to cause cultural misunderstandings. Cultural metaphor is a conventional expression within a particular culture. Machine translation techniques involve deconstructing and reconstructing meaning, but understanding and reproducing meaning is not a simple mechanical process. Human subjectivity is essential throughout.

3.2.2 Lack of Creativity in the Use of Language

Generally speaking, people who believe that machine translation can replace manual translation often focus on the instrumental rationality of translation, that is, the logic and information of translation, which makes us see that machine translation merely repeats concepts or conveys information. However, they tend to ignore the rational dimension of the value of translation, namely the communicative and social nature of translation.

3.3 The Relationships between Machine Translation Technology and Employment of English Students

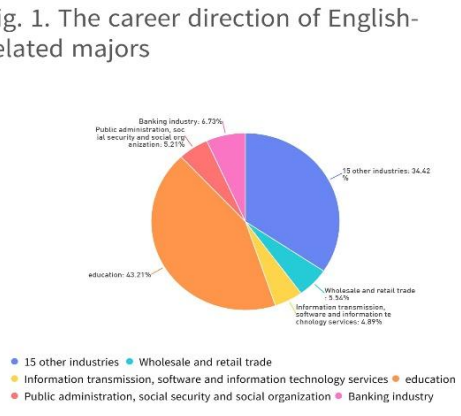
3.3.1 Current employment situation of English majors

However, despite the great progress made in machine translation technology, it still encounters some insurmountable problems. One of the most prominent problems is that machine translation cannot fully comprehend and process the true meaning of language. When dealing with semantic ambiguity, cultural habits and language expressions in specific contexts, machine translation often results in mistranslations or inaccuracies. Such mistranslation may be a only minor flaw in daily communication, but in professional fields such as business and law, Therefore, even if machine translation technology is advanced, human translators are still required to perform post-proofreading and corrections to ensure the accuracy and completeness of translation.

For English majors, the development of machine translation technology has undoubtedly brought dual impacts. On the one hand, with the popularity of machine translation in the market, traditional manual translation positions may be reduced, which increases the employment pressure of English majors. On the other hand, this also provides new development opportunities for English majors. They can utilize machine translation technology to apply their language skills and professional knowledge to a broader array of fields such as machine translation system optimization, cross-cultural communication consulting.

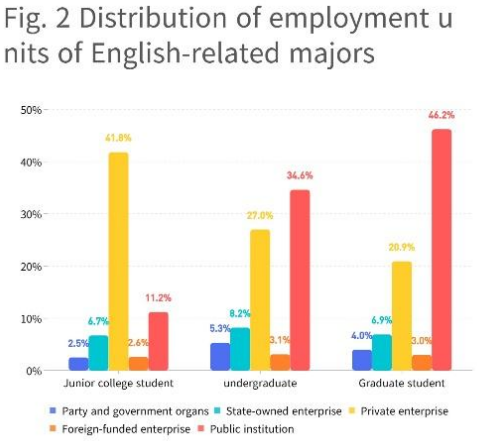
In the career survey of the academic career platform, we learned that graduates of English-related majors have a wide range of employment, and the main industries include education (39.8%), manufacturing (7.8%), and finance (6.2%), which is basically consistent with the industry distribution of graduates of many traditional foreign language colleges. This is shown in Figure 1.

Fig. 1 The career direction of English-related majors



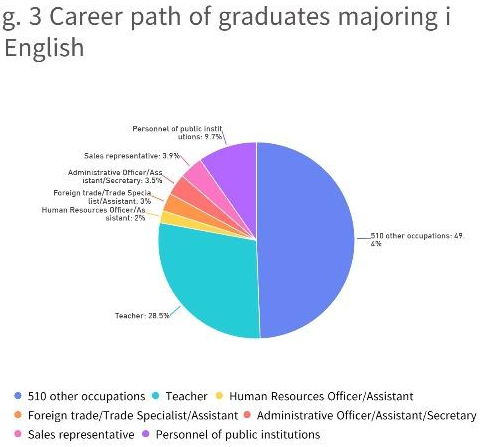
According to the types of employment units for graduates of all educational levels (Figure 2), private enterprises and institutions have the largest number of graduates majoring in English. With the improvement of graduates 'educational qualifications, the number of employed people in institutions gradually increases, while the number of employed people in private enterprises decreases.

Fig. 2 Distribution of employment units of English-related majors



Among the employed graduates majoring in English (Figure 3), teachers are the preferred occupation for employment (28.5%), and the employment units are mainly universities, primary and secondary schools, and various educational institutions. followed by personnel in public institutions (9.7%), mainly distributed in the fields of public administration, social security and social organizations; The third most popular occupation is sales representative (3.9%), which shows that English as one of the widest used language worldwide, plays an indispensable role in the development of the country's import and export trade.

Fig. 3 Career path of graduates majoring in English



Therefore, facing the challenges and opportunities presented by machine translation technology, English majors need to reassess their career planning and development path. They should not only enhance their language proficiency and professional skills but also actively acquire new technologies and knowledge to adapt to the changes and advancements in the industry. At the same time, education departments and relevant institutions should enhance the training and support for English majors to help them better cope with the challenges of the future job market.

3.3.2 Substitution Effect

Machine translation can replace some manual translation work, which may lead to a reduction in job opportunities for English majors. However, for general commercial texts, the application of machine translation can certainly help reduce costs and improve translation efficiency. Nevertheless, it is important to note that

artificial intelligence is not yet capable of replacing all human translators. From a translation perspective, speech generation is never simply the result of combining words or phrases. The clarity of speech relies not only on grammatical logic but also on intricate cognitive, emotional, and psychological processes.

3.3.3 Changes in Skill Requirements

The increasing popularity of machine translation technology presents new challenges for English majors. They must now master this technology to remain competitive.

3.4 The Impact of Machine Translation Technology on Employment of English College Students

3.4.1 Positive Impact

(1) Machine Translation Technology Offers New Opportunities for English Students

The limitations of machine translation technology provide a great way for English majors to survive. Thus, it is important to note that human translators can provide more targeted, detailed, and in-depth translations, making the translation work more humane and comprehensible. Simultaneously, the application of machine translation technology has led to the emergence of numerous jobs related to disseminating and communicating English information in non-translation fields.

For English majors, the development of machine translation technology is good news. This is good news for English majors, who can now pursue careers in film and television translation, advertising copywriting, web editing, education, and other related fields. English majors can also apply their translation skills to various fields, including network culture, product manuals, and textbooks. In many cases, collaboration between machine translation and human translators can yield superior results. This will expand the employment opportunities for English majors, including emerging professions such as machine translation engineers and translation quality assessors.

(2) Machine Translation Reversal Enhances English Students' Translation Ability

The development of machine translation technology can automatically translate one language into another without the help of other tools. The introduction of machine translation technology can stimulate employment demand, encourage English majors to gradually increase their knowledge, elevate their skills, and highlight the advantages of human translation. No matter how rapidly machine translation technology develops, it is still difficult to compare with humans in terms of feelings and innovations. With the development of artificial intelligence translation technology, English learners must pay attention to their own advantages and competitiveness, so as to maintain an irreplaceable edge in the labor market and ensure better participation in competitions. When machine translation processes complex and technical paragraphs, there is a gap in fluency, and the translation may not accurately convey the key points and the author's intended meaning. This cannot meet the requirements of the development of large enterprises, so people need to help improve the artistic level of the whole work. This urges English majors not only to improve their translation skills, but also to meticulously study the domestic and foreign languages carefully, adding added value to translation, and becoming compound talents with high comprehensive quality.

(3) Machine Translation Technology Can Provide Human Translators With More Efficient Tools

The development of machine translation technology can provide more efficient tools for human translators. Machine translation technology can handle a large number of translation tasks, so that human translators to focus more on tasks that need to be handled manually, such as content editing, professional proofreading and translation process optimization. In this case, machine translation technology can not only improve efficiency, but also enhance the core value of human translators.

3.4.2 Negative Impact

(1) Machine Translation Efficiently Impacts the Job Market for English Graduates

The rapid development of machine translation has had a negative impact on the overall employment market for English graduates. Now that machine translation sentences can generally meet the grammatical standards, the basic requirements of many companies can be met, and the high efficiency of machine translation has replaced many manual translations, the demand for talents in this industry has become oversupplied, resulting in excessive competitive pressure, making the overall employment situation very bleak.

(2) Machine Translation Increases Competition

The use of machine translation technology has lowered the barriers to entry into the translation industry. In the past, human translation required a high level of language skills and professional knowledge, whereas the use of machine translation tools has made it easier for non-professionals to carry out simple translation tasks.

This has led to more people entering the translation industry, resulting in increased competition in the industry. At the same time, the increased efficiency of machine translation has enabled translation companies and clients to obtain translation services at lower costs and faster speeds. Thus, the decline in demand for manual translation will exacerbate the employment situation for English majors.

4. Understanding the Impact of Machine Translation Technology on English College Students' Employment

The most crucial thing for us as English majors in a time of machine translation is to prioritize developing our fundamental competitiveness. Our superior position as humans, known as our "core competitiveness," is unassailable and cannot be undermined by any adversary. The largest barrier to our professional advancement as English majors is machine translation. As a result, we must take advantage of machine translation's benefits. We can promote the maximum effectiveness of man-machine collaborative translation mode and adapt to the modern translation profession with the speed and convenience of machine translation combined with our manual translation's ability to accurately express cultural connotations."[5] Knowledge specialization, technology modernization, task speed, As times change, English majors' basic competencies should also adapt. Students specializing in English should be especially trained in the application of translation technology. One of the educational goals of talent cultivation should be the ability to apply translation technology competently if we wish to develop translation abilities with benefits. With the backdrop of the new period, the proficiency in the use of foreign languages and intercultural communication in particular contexts should be given new goals and meanings.

4.1 Boost Translation Efficiency and Bridge the Technology Gap in Machine Translation

Chinese culture is rich in cultural meaning and has a 5000-year history. It is impossible to translate our ideas accurately without a deep cultural foundation and a careful examination of Chinese cultural connotations. This is that machine translation cannot be competent for our human mind. It cannot express our thoughts correctly under any circumstances. With the rapid development of science and technology, Although the translation machine is more advanced and has the ability to interpret long-distance anaphora, English is hypotaxis, while Chinese is parataxis. Chinese has such characteristics that it can make its own expression patterns change so much that the machine misreads sentence structure, gender number collocation, polysemy, irony and images from time to time. The structure of the Chinese language frequently affects machine translation, leading to improper Chinese expressions and cultural misinterpretations without a thorough grasp of the cultural context. Excellent collaboration prior to translation, excellent communication throughout translation, and excellent editing following translation. The "three steps of translation" involve the use of artificial intelligence in translation. Human translators with strong language proficiency and cultural literacy are the gatekeepers of translation quality when machines take over the mundane translation tasks.[6]

Many research have been done to investigate the connection between fluency in one's native tongue and aptitude for translating into another. The findings demonstrate the critical role that native language competency plays in translation work, particularly when translating and distributing materials pertaining to Chinese traditional culture. English majors must meet requirements for native language competency that go above and beyond the typical requirements. Thus, it is important to consider how English majors' native language competency affects the accuracy of their translations. Many research have been done to investigate the connection between fluency in one's native tongue and aptitude for translating into another. The findings demonstrate the critical role that native language competency plays in translation work, particularly when translating and distributing materials pertaining to Chinese traditional culture. English majors must meet requirements for native language competency that go above and beyond the typical requirements. Thus, it is important to consider how English majors' native language competency affects the accuracy of their translations.

Therefore, in order to ensure that translation is both efficient and high-quality, offer businesses cost-effective options, and strengthen their competitive advantage, English major students need to improve their own translation ability, in-depth word and sentence choice, cultural system, fill in the gaps in machine translation technology, and better match with machine translation.

[5]Dai Guangrong, Wang Chenyu. Development and Prospect of Applied Translation Research in China: Based on Analysis of Previous National Seminars [J]. Shanghai Translation, 2024 (01):7-13+95.
[6]Luo Xinzhang. Translation Theory and Practice [M]. Guangzhou: Guangdong World Book Publishing Company, 2014.

4.2 Learn How to Apply Translation Technologies

Future employment prospects for English majors require proficiency with this translation technology. Information technology is the era of this century. If translators wish to perform at the highest level on the job market, they need corpus and language intelligence technologies. When less experienced translators utilize computer translation, they are only able to understand the translation's surface meaning; they are unable to understand its deeper meaning. Machine translation can be used by qualified translators with extensive cultural backgrounds to produce translations that are more meaningful and efficient.

Thus, in order to increase their options and improve their chances of finding work, English majors study artificial intelligence technology, multi-field, all-around development, and how to use school and network resources to learn more related majors. They also develop themselves into multi-skilled talents and sell their English and other skill combinations.

4.3 Extensive Fine Analysis While Preserving Conventional Benefits

Some fundamental tasks may be entirely replaced by intelligent machine translation, but human emotion, creative translation, and more specialized translation jobs will not be supplanted by translation machines. As a result, the industry now requires translation experts that are fluent in their native tongue and cannot be mechanized.[7]

Professional roles include both simultaneous and sequential interpretation at foreign conferences. Along with comprehensive knowledge and strong fundamental translation skills, interpreters should also be capable of handling emergencies and quickly observing and analyzing the scene. Interpreters should always be aware of the scene's background, speak with the speaker right away, Unfortunately, there aren't many talented people in the world today who can perform this kind of work. Robots cannot take the role of simultaneous interpretation and alternate interpretation. Colleges and institutions must focus on the training of expert translators due to the size of the market need.

The process of developing translation talents is a gradual one that takes time and involves both knowledge acquisition and skill development.

Colleges and universities should focus on developing students' distinct emotional and cultural colors as well as their own skills, like cooperation, interaction, and on-the-job adaptability, in order to produce translation elites who can help English majors benefit from each other's machine translations and adjust to the demands of the modern world.

Thus, in order to make translation engaging and current, English language learners themselves should preserve their natural advantages—semantic colors that are imperceptible to machines—and broaden their global perspectives.[8]

5. Conclusion

With the speed at which technology is developing, it is anticipated that machine translation technology will advance in language processing, enhance comprehension of cultural background, and produce more sophisticated translation tools to increase translation quality and efficiency. Although it also creates a new avenue for development, this puts English students' employment at risk. The translation industry presents opportunity for translators, but the information sector poses obstacles as well. Colleges and universities should be aware of the benefits and drawbacks of machine translation as well as its potential future development trend so they can make necessary adjustments to their talent development programs. Since students are majoring in English, they should be aware of how times change and modify their course of study to meet the demands of the evolving job market.

References

[1]. Cha Na. Influence and application of machine translation technology based on large language model in book translation industry [J]. Inner Mongolia Science and Technology and Economy, 2023 (24):138-141.
[2]. Dai Guangrong, Wang Chenyu. Development and Prospect of Applied Translation Research in China: Based on Analysis of Previous National Seminars [J]. Shanghai Translation, 2024 (01):7-13+95.
[3]. Du An. Value Space of Manual Translation and Transformation of Translation Education in ChatGPT Era [J]. Foreign Languages and Cultures, 2023, 7 (04):90-103.DOI:10.19967/j.cnki.flc.2023.04.009.

[7]Du An. Value Space of Manual Translation and Transformation of Translation Education in ChatGPT Era [J]. Foreign Languages and Cultures, 2023, 7 (04):90-103.DOI:10.19967/j.cnki.flc.2023.04.009.
[8]Cha Na. Influence and application of machine translation technology based on large language model in book translation industry [J]. Inner Mongolia Science and Technology and Economy, 2023 (24):138-141.

[4]. Hu Xiaopeng, Geng Xinhui, Yuan Qi. Design of high quality English-Chinese machine translation engine based on hybrid strategy [J]. Industrial Technology Innovation, 2014, 01 (02):161-167.DOI:10.14103/j.issn.2095-8412.2014.02.022.

[5]. Li Yegang, Huang Heyan, Shi Shumin et al. Review of multi-strategy machine translation [J]. Journal of Chinese Information Science, 2015, 29 (02):1-9+23.

[6]. Luo Xinzhang. Translation Theory and Practice [M]. Guangzhou: Guangdong World Book Publishing Company, 2014.

[7]. Tsinghua University (Department of Computer Science)--China Engineering Science and Technology Knowledge Center, Knowledge Intelligence Joint Research Center. 2018 Machine Translation and Artificial Intelligence Research Report [R]. AMiner.Org, 2018: 2,9-19.